

IN THE CLAIMS:

1. (Currently Amended) A method for genetic transformation of tomato or melon, said method comprising the steps of:

- (a) preparing a silicon carbide fiber solution;
- (b) preparing a pollen germination medium;
- (c) preparing a DNA solution;
- (d) mixing said silicon carbide fiber solution with said pollen germination medium and said DNA solution to form a mixture;
- (e) adding fresh pollen into said mixture to form a paste;
- (f) vortexing said paste for 30 to 60 seconds, thereby producing a vortexed paste;
- (g) applying said vortexed paste on female reproductive plant parts for pollination; and
- (h) selection of transformants.

2. (Previously Amended) The method of Claim 1, wherein the silicon carbide fibers of said silicon carbide fiber solution used in step (a) are approximately 0.1-20 μm in diameter and between 1-250 μm in length.

3. (Cancelled)

4. (Previously Amended) The method of Claim 1, wherein the silicon carbide fiber solution prepared in step (a) comprises a sufficient amount of sterile water or solvent to make a 5% to 25% aqueous solution.

5. (Cancelled)

6. (Previously Amended) The method of Claim 1, wherein the pollen germination medium contains about 5% - 15% sucrose, 0.01% - 1.0% H_3BO_3 , 0.01% to 1.0% $Ca(NO_3)_2 \cdot 4H_2O$ at pH 5.6.

7. (Cancelled)

8. (Previously Amended) The method of Claim 1, wherein said DNA solution is a solution of plasmid DNA.

9. (Previously Amended) The method of Claim 8, wherein said solution of plasmid DNA is dissolved in a Tris EDTA solution.

10. (Cancelled)

11. (Currently Amended) The method of Claim 1, wherein the selection of transformants is performed by growing the phenotypic expression of a specific cloned selectable marker gene with a phenotypic expression, said phenotypic expression being selected from the group consisting of an both antibiotic resistance gene and a herbicide resistance gene, said cloned selectable marker gene selected from the group consisting of an antibiotic resistance gene and a herbicide resistance gene.

12. (Previously Amended) The method of Claim 11, wherein said selectable marker gene with a phenotypic expression is a gene regulating anthocyanin levels.

13. (Previously Amended) The method of Claim 11, wherein said selectable marker gene is a gene providing resistance to at least one antibiotic.

14. (Previously Amended) The method of Claim 11, wherein said selectable marker gene is a gene providing resistance to neomycin phosphotransferase.

15. (Previously Amended) The method of Claim 11, wherein said selectable marker gene is a gene providing resistance to kanamycin.

16. (Previously Amended) The method of Claim 11, wherein said selectable marker gene is a gene providing resistance to phosphinothricin acetyltransferase.

17. (Previously Amended) The method of Claim 1, wherein the flowering plant is maize.

18. (Cancelled)

19. (Cancelled)

20. (Cancelled)

21. (Cancelled)

22. (Cancelled)

23. (Cancelled)

24. (Cancelled)

25. (Cancelled)

26. (Cancelled)

27. (Cancelled)

28. (Cancelled)

29. (Cancelled)

30. (Cancelled)

31. (Currently Amended) A method for genetic transformation of maize, tomato, or melon reproducing sexually, said method comprising the steps of:

- (a) preparing a silicon carbide fiber solution;
- (b) preparing a pollen germination medium;
- (c) preparing a DNA solution;
- (d) mixing said silicon carbide solution with said pollen germination medium and DNA solution to form a mixture;

- (e) adding fresh pollen into said mixture to form a paste;
- (f) vortexing said paste for 30 to 60 seconds; thereby producing a vortexed paste
- (g) applying said vortexed paste on female reproductive plant parts for pollination; and
- (h) selection of transformants.

32. (Currently Amended) The method of Claim 31, wherein the [said] silicon carbide fibers of said silicon fiber solution used in step (a) are approximately 0.1-20 μm in diameter and 1-250 μm in length.

33. (Previously Amended) The method of Claim 31, wherein the silicon carbide fiber solution prepared in step (a) comprises a sufficient amount of sterile water or solvent to make a 5% to 25% aqueous solution.

34. (Previously Amended) The method of Claim 31, wherein the pollen germination medium contains about 5% - 15% sucrose, 0.01% - 1.0% H_3BO_3 , 0.01% - 1.0% $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ at pH 5.6.

35. (Previously Amended) The method of Claim 31, wherein said DNA solution is a solution of plasmid DNA.

36. (Currently Amended) The method of Claims 31 and 35, wherein said solution of plasmid DNA is dissolved in a Tris EDTA solution.

37. (Currently Amended) The method of Claim 31, wherein the selection of transformants is performed by growing the phenotypic expression of a specific cloned selectable marker gene with a phenotypic expression, said expression being selected from the group consisting of both an antibiotic resistance gene and a herbicide resistance gene,

said cloned selectable marker gene selected from the group consisting of an antibiotic resistance gene and a herbicide resistance gene.

38. (Previously Added) The method of Claim 37, wherein said selectable marker is a gene providing the resistance to neomycin phosphotransferase.

39. (Previously Amended) The method of Claim 37, wherein said selectable marker gene is a gene providing resistance to kanamycin.

40. (Previously Amended) The method of Claim 37, wherein said selectable marker gene is a gene providing resistance to phosphinothricin acetyltransferase.

41. (Previously Added) The method of Claim 2, wherein said silicon carbide fibers are between 1-2 μm in diameter and 10-80 μm in length.

42. (Previously Added) The method of Claim 32, wherein said silicon carbide fibers are between 1-2 μm in diameter and 10-80 μm in length.

43. (Previously Added) The method of Claim 6, wherein the pollen germination medium contains about 15% sucrose, 0.018% H_3BO_3 , 0.04% $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ at pH 5.6.

44. (Previously Amended) The method of Claim 34, wherein the pollen germination medium contains about 15% sucrose, 0.018% H_3BO_3 , 0.04% $\text{Ca}(\text{NO}_3)_2 \cdot 4\text{H}_2\text{O}$ at pH 5.6.

45. (Previously Added) The method of Claim 1, wherein said flowering plant is melon.

46. (Previously Added) The method of Claim 1, wherein said flowering plant is tomato.